

AGRICULTURE DRAINAGE AFFECTS RIVER WATER QUALITY

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ABSTRACT

The acidic level of the freshwater is a major concern to water treatment plant operators. Extremely acidic freshwater could affect the operation of the treatment plant in many ways. The cost to neutralisation the water would increase and treatment scheduling would be more complicated. This paper reports the influence of agricultural drainage on river water quality in Bekok river system in Johor, Malaysia. The river is the sole source of freshwater supply to two water treatment plants located at the downstream reach of the river. Three water quality parameters, i.e. pH, Iron and Ammonia-N, were used as an indication parameter. Water samples collected from 16 different river reaches along the 20-km river were analysed. A significant decrease in pH was found near the water intake point, where most of the drained areas are located. The study also found that in general, the quality of the river water was better during low flow condition (non-rainy days) compared to high flow (rainy days). Multiple regression analysis showed that pH was significantly related to Iron and Ammonia contents.